General Assembly

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Agenda items 138 and 151

Proposed programme budget for 2023

Administrative and budgetary aspects of the financing of the United Nations peacekeeping operations

Progress on the functioning and development of the Umoja system

Twenty-second report of the Advisory Committee on Administrative and Budgetary Questions on the proposed programme budget for 2023

I.   Introduction

1.   The Advisory Committee on Administrative and Budgetary Questions has considered the report of the Secretary-General on the progress on the functioning and development of the Umoja system (A/77/495) submitted pursuant to General Assembly resolution 76/246, in which the Assembly requested the Secretary-General to provide an annual progress report updating the Assembly on the functioning and development of the Umoja enterprise resource planning system. The Committee also had before it the eleventh and final annual progress report of the Board of Auditors on the implementation of the United Nations enterprise resource planning system (A/77/135), submitted pursuant to Assembly resolution 76/246.

2.   During its consideration of the aforementioned reports, the Advisory Committee met with the representatives of the Secretary-General, who provided additional information and clarification, concluding with written responses received on 1 November 2022. The Committee also had an exchange with the members of the Audit Operations Committee, who provided additional clarification on the findings of the Board of Auditors, concluding with written responses received on 26 September 2022.

II. Eleventh and final annual progress report of the Board of Auditors on the implementation of the United Nations enterprise resource planning system

3.   The Board of Auditors indicates that its final report on the implementation of Umoja covers project governance and management, the deployment and continuous improvements of Umoja functionalities, support for and enhancement of Umoja and the benefits and costs of Umoja. In addition, the report also includes the outcomes of the Board's independent assessment of the implementation status of the Umoja project, as well as areas that the Board considers may come under Umoja in the future (A/77/135, summary and para. 20).

4.   Among the key findings in the report, the Board of Auditors noted that a post-implementation review had not been conducted (ibid., para. 24). The Board also provides its assessment of the deployment of Umoja Extension 2 projects, including their status of implementation (ibid., paras. 80–99) and inter- and intra-solution linkages (ibid., paras. 100–102). The Board is of the view that the Administration should continue to conduct user satisfaction surveys for each Umoja Extension 2 solution in order to identify areas for improvement and further optimization (ibid., para. 109). The Board noted that the Umoja Steering Committee had endorsed the upgrade to a new SAP enhancement package and that such technological upgrades might bring additional costs to the Organization which had not been included in the total cost of ownership estimation (ibid., paras. 202–206).

5.   With regard to the implementation status of its recommendations, the Board of Auditors indicates that, of the 60 pending recommendations issued in its previous reports up to 31 December 2020, 14 (24 per cent) have been implemented, 23 (38 per cent) are under implementation and 23 (38 per cent) have been overtaken by events (ibid., summary). A more detailed commentary on the individual recommendations, together with information on the actions taken by the Administration, is provided in the annex to the report of the Board. In paragraph 70 of his report, the Secretary-General indicates that the final audit of the enterprise resource planning system required an estimated 2,500 person-hours of effort and was comprised of over 300 in-depth questions (A/77/495, para. 70). The Secretary-General also notes that, since the previous audit by the Board, the Administration has reduced outstanding recommendations by 62 per cent, from 60 to 23, and will work to address the outstanding 14 new recommendations. **The Advisory Committee acknowledges that the final report of the Board of Auditors on the implementation of Umoja presents a comprehensive independent assessment on the implementation of the project and provides important recommendations for Umoja's future. The Committee commends the high quality of the report, concurs with the recommendations of the Board and stresses the importance of the implementation of the outstanding recommendations as matter of priority (see A/76/7/Add.20, para. 5).**

III. Progress report of the Secretary-General on the functioning and development of the Umoja system

6.   The Secretary-General indicates that his report serves as an annual progress report on the functioning and development of the Umoja enterprise resource planning system, pursuant to General Assembly resolution 76/246, and provides an update on all major activities related to Umoja since his final progress report on the enterprise resource planning project (A/76/386). The report of the Secretary-General covers: (a) the Umoja system strategy and the three core pillars of the Umoja system (Umoja

Analytics, continuous improvements and systems, security and infrastructure); (b) the Umoja governance model; (c) the benefits realization of Umoja; (d) risk management; (e) training activities; (f) production support; and (g) the total cost of ownership of the Umoja solution. Details on lessons learned, the implementation of the recommendations of oversight bodies and the mainstreaming of Umoja Extension 2 processes are also provided, along with a proposal for a revised financing model for the Enterprise Resource Planning Solution Division (A/77/495, summary and paras. 1–2).

7.   The Advisory Committee notes the information included in annex II of the report of the Secretary-General on the overall system resources, as well as in annex I on the justification of positions for supply chain management initiative support, initially authorized under the Umoja project. Upon enquiry, the Committee was informed that the 24 positions, currently financed from peacekeeping cost recovery funds, provided a range of business support capabilities that served clients in all Secretariat entities in terms of post-deployment support and operational sustainment, in addition to project support. According to the Secretary-General, those resources, working closely with the Enterprise Resource Planning Solution Division, had been instrumental as business enablers for clients to successfully function in an enterprise resource planning-based and data-driven supply chain management operation. The Committee was also informed that the Department of Operational Support would include a proposal for regularizing those core business resources on a cost-neutral basis and that a proposal would be made to change the funding source from the peacekeeping cost recovery fund (20PCR) to the support account for peacekeeping operations (20QSA) in the course of the 2023/24 budget submission. **The Advisory Committee trusts that the Secretary-General will continue to include a comprehensive overview of all resources for the Umoja system in future reports.**

A. Umoja system

Strategy

8.   The Secretary-General indicates that the strategic direction of the Enterprise Resource Planning Solution Division is set on three pillars: Umoja Analytics; continuous improvements; and systems, security and infrastructure. The focus on analytics is in line with the Data Strategy of the Secretary-General for Action by Everyone[1] and the initiatives contained in Our Common Agenda (A/75/892) in that it provides both Member States and staff access to a wider and deeper scope of data with greater ease of use via portals, dashboards and priority reports. The programme of continuous improvements of Umoja is designed to deliver digital transformation and innovation driven by business and technological advancements, thereby ensuring that Umoja remains fit for purpose. Regular improvements to systems, security and infrastructure ensure resilience against security threats; for 2023, the Division plans to undertake an upgrade of Umoja to SAP ERP 6.0 enhancement package 8, ensuring continued vendor support and keeping abreast of technological innovations (A/77/495, paras. 3–6).

9.   In its report, the Board of Auditors notes that the strategic direction of the Enterprise Resource Planning Solution Division is based on a multi-year view, approved by the Umoja Steering Committee, which takes into account the evolving nature of technology and the business. The Board also notes that the strategy and objectives of the Division were recorded under a subprogramme of the proposed programme budget and include an assessment of the actual status of a programme, a multi-year strategy and two-year planned objectives. The Board is of the view that

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[1] See www.un.org/en/content/datastrategy/index.shtml.

the strategy for Umoja has been developed for the purposes of annual budget formulation and that, considering the investment to be made in the system until 2030, the Organization should develop a consolidated long-term plan for the continuous improvement of Umoja and the identification of technically feasible and cost-effective solutions (A/77/135, paras. 113–114 and 117).

10. The Board informed the Advisory Committee, upon enquiry, that development of a longer-term basis for strategic planning for Umoja would provide greater clarity of scope for continuous improvements, as well as cost control and coordination of limited resources. Upon enquiry, the Administration, in its response to the recommendation of the Board, informed the Committee that the strategic direction of Umoja was based on the three core pillars (see para. 8 above) and on a multi-year plan which took into account the evolving needs of the Organization and the dynamic nature of the technology and infrastructure underpinning it, and that the inclusion of the long-term requirements of the Umoja system, including infrastructure, system upgrades and licensing, in the 2023 capital investment plan was envisaged. **The Advisory Committee notes that no requirements related to the Umoja system were included in the report of the Secretary-General on capital investment planning and trusts that further clarification will be provided to the General Assembly at the time of consideration of the present report and in the next report, including on the relationship between such envisaged requirements and the investments related to the revised information and communications technology (ICT) strategy.** The Committee makes further comments and observations in its reports on the ICT strategy and capital investment planning (see A/77/586 and A/77/585).

11. **The Advisory Committee concurs with the observations and recommendations of the Board of Auditors and is of the view that long-term strategic planning is key to a better assessment of and transparency in the scope and related costs of Umoja moving forward. The Committee trusts that further information on the long-term plan for Umoja, including the main scope of expected improvements and benefits, as well as projected investments until 2030, will be provided in the context of the next report (see also paras. 19, 30 and 39 below)**.

Umoja Analytics

12. The Secretary-General provides an update on the Umoja Analytics platform, which is intended to serve United Nations staff and Member States in gaining enhanced information insights through sophisticated tools that give access to larger volumes of data in a user-friendly manner (A/77/495, paras. 7–21). The platform is based on certified data models that mine data from both internal sources, such as Inspira and iNeed, and external ones, such as the United Nations Development Programme, and provides predictive analytics and "what if" scenarios for improved decision-making through:

(a) **Member State portals**: The Secretary-General indicates that two portals were delivered in 2022: the uniformed capabilities support portal (ibid., figure I) in January and the United Nations Secretariat workforce portal (ibid., figure II) in July. It is also indicated that improvements were made to the contributions portal and that future portals may be forthcoming based on the needs of Member States;

(b) **Enterprise dashboards**: It is also indicated in the report that dashboards serve the needs of staff, with two examples being the enterprise risk management dashboard to capture, evaluate and prioritize mitigation actions for United Nations risks, and the integrated planning, management and reporting dashboard (ibid., figure III), integrating other solutions, namely strategic management, budget

formulation and project systems, to manage the full life cycle of United Nations programmes and projects;

(c) **Reporting for programme managers**: The Secretary-General highlights that the migration of business intelligence dashboards and reports to Umoja Analytics and their redesign will take advantage of more powerful features and enhanced data sets. It is also indicated that "self-service" analytics will unlock the benefits of Umoja data and visualizations to non-experts and has already been deployed in beta mode to functional subgroups, with Secretariat-wide delivery projected for the end of 2023.

13. In its report, the Board of Auditors expresses the view that, in order to promote digital inclusion, the Administration needs to take measures to expand usage of the contributions portal to the 30 per cent of Member States that did not avail themselves of the solution. The Board also notes that only 3 of the top 10 most frequently used business intelligence data models have been certified and recommends that the Administration finalize the business intelligence standard operating procedure and consider priority certification of frequently used data models (A/77/135, paras. 141-147). Upon enquiry, the Advisory Committee was informed that a workstream of Umoja Analytics focused specifically on the migration of certified data models from Umoja business intelligence and that, post-migration, only certified data models would be available under Umoja Analytics.

14. **The Advisory Committee acknowledges the progress made in facilitating the access by Member States to up-to-date data on the functioning of the Organization. The Committee concurs with the Board's assessment that digital inclusion must be promoted in the access to and use of the portals by Member States, and trusts that the Secretary-General will continue his efforts to ensure transparency, inclusivity and access to updated data in the further roll-out of Member State portals.**

Continuous improvements

15. The Secretary-General highlights some of the key Umoja improvements that facilitate simplification, automation and process improvements, thereby leveraging the system for business transformation. Examples of such "continuous improvements" since the previous progress report of the Secretary-General (A/76/386) and future planned improvements are cited in the areas of:

(a) Human capital management, including the automation of individual payroll processes and reduction of the risk of payroll-related errors, the further integration of Umoja and Inspira with respect to index number searching, a new interface with the United Nations Joint Staff Pension Fund to facilitate pension payment processing, and the migration to Umoja of after-service health insurance data for locally recruited staff (A/77/495, paras. 24–26). Improvements under development include a new tool for management of rejected sick leave requests and a data interface for the United Nations Headquarters host country registration and visa application system (ibid., para. 27);

(b) Travel, including an enhancement to capture certifying officer consent and future enhancements for a more efficient routing of claims (ibid., paras. 28–29);

(c) Finance, including changes to electronic payment messaging and the direct updating of staff banking information, planned interfaces for the automation of foreign exchange and investment trades, the redesign of implementing partner agreement formats and new features for the oversight of implementing partner payments and performance via integration with the integrated planning, management and reporting solution, further upgrades to forms and useability of the strategic planning, budgeting and performance management solution and improvements in the

preparation of financial statements through the automation of elimination rules and the automated generation of statements for 140 trust funds (ibid., paras. 30–34);

    (d)   Supply chain management, including the deployment of the supply chain planning tool to generate 2023 global supply chain plans and promote a data-driven supply chain; enhancements under logistics and the source to acquire area in, respectively, processing customs clearances and entering into cost-sharing arrangements with other United Nations entities. Improvements under development include enhancements to transportation management for the shipment of goods and contingent-owned equipment and the travel of uniformed personnel (ibid., paras. 35-37).

16.   Continuous improvements in other areas include payments and reporting improvements under uniformed capabilities management (ibid., para. 38) and the integration of Umoja with Indico.UN under the conference and event management area (ibid., para. 39).

17.   Upon enquiry as to the contribution of partners to continuous improvements to existing solutions, the Committee was informed that: (a) partners from business, led by the Department of Management Strategy, Policy and Compliance and the Office of Programme Planning, Finance and Budget and including extended business groups comprising programme and finance representatives from the United Nations Environment Programme, the United Nations Office on Drugs and Crime, the Mine Action Service, the Office of the United Nations High Commissioner for Human Rights, the United Nations Interim Administration Mission in Kosovo, the United Nations Human Settlements Programme and the Office for the Coordination of Humanitarian Affairs, were involved in redesigning the agreement format for the implementing partners solution; (b) the human resources functional subgroup was responsible for drafting the business requirements, user verification testing, change management and tier 2b production support; (c) the supply chain functional subgroup was responsible for drafting the business requirements, user verification testing, change management, training and tier 2b production support; and (d) in relation to the integration of Indico.UN, the Department for General Assembly and Conference Management had led the integration efforts through business analysis, which had resulted in the submission of the business requirements, implemented jointly by the Enterprise Resource Planning Solution Division and the Indico.UN technical team.

18.   The report also indicates that deployment of Umoja to the International Court of Justice is planned for January 2023 (ibid., para. 40). The Advisory Committee recalls that the consideration by the Court of whether to select Umoja as its enterprise resource planning system started in 2014 and notes its observations regarding the significant amount of time and financial resources devoted to the process (see A/72/7 and A/72/7/Corr.1, para. III.17; see also A/70/7, paras. III.12 and III.13). The Committee further recalls that, by its resolution 72/261, the General Assembly authorized the Court to enter into commitments not to exceed $1 million for the implementation of an enterprise resource planning system and that the Court had chosen Umoja for the project, with a scheduled deployment date of October 2019 (see A/75/7 and A/75/7/Corr.1, para. III.13). The Committee notes that, as at 20 May 2022, deployment of Umoja to the Court was still not complete (see A/77/7, para. III.11). **The Advisory Committee is of the view that the deployment of Umoja to the International Court of Justice does not constitute an improvement of Umoja system functionalities. The Committee trusts that further clarifications regarding the status of deployment of Umoja to the Court and its relation to the Umoja project will be provided to the General Assembly at the time of its consideration of the present report.**

19.	The Board of Auditors notes that, in line with best practices, a clear vision of improvements needs to be defined, including a road map for improvements based on a gap analysis of potential solutions (A/77/135, paras. 115–116) (see also para. 11 above).

20.	In addition, the Board expresses its view that end user experience is a key component of the continuous improvement of Umoja and that ongoing user surveys should be conducted to identify improvement opportunities from end users (ibid., para. 119). Upon enquiry, the Advisory Committee was provided with the overall number of Umoja users by category, as detailed in table 1 below.

Table 1
Umoja users by category

Category	Number
Internal Secretariat users	39 154
United Nations system users	202
External users, excluding Member States	3 066
Member State users	880
Total	**43 302**

Systems, security and infrastructure

21.	The report of the Secretary-General provides an update on the efforts of the Enterprise Resource Planning Solution Division to implement Umoja system upgrades, risk mitigation and disaster recovery planning in order to ensure the operational resilience and stability of the system (A/77/495, paras. 41–50). It is indicated that the Division implemented the enterprise risk management and process control modules, further contributing to the Secretary-General's reform strategy and improving accountability for results. Upgrades have been delivered to critical Umoja applications, including the transportation and event management modules, as well as the Fiori and reporting systems. A single sign-on has been implemented for Umoja Analytics, data scrambling has been rolled out to training environments, and the mobile user experience has been improved, with further enhancements planned through the extension of mobile technologies to barcode scanning and approvals of user access provisioning requests.

22.	Upon enquiry, the Advisory Committee was informed that the governance, risk and compliance module in Umoja would, once launched, provide the functionality needed to capture, document, monitor and assess the activity-level internal controls for the Secretariat entities included in its scope, thereby replacing spreadsheets for the collection of data, providing robust analytics, streamlining entity- and activity-level controls and enhancing the integration between the internal control and risk management components. **The Advisory Committee trusts that the Secretary-General will provide an update on the roll-out of the governance, risk and compliance module to the General Assembly at the time of its consideration of the present report and in the context of his next progress report.**

23.	It is also indicated that, together with the Office of Information and Communications Technology, the Enterprise Resource Planning Solution Division continues to monitor cybersecurity threats and has implemented an additional, context-aware cybersecurity vulnerabilities detection application, allowing for enhanced validation and prioritization of anomalies and threats. The Secretary-General notes that implemented measures have brought the Umoja system into full

compliance with the cybersecurity action plan, as acknowledged by the Board (see A/77/135, annex, No. 44). The Advisory Committee was informed, upon enquiry, that the Enterprise Resource Planning Solution Division and the Office of Information and Communications Technology held regular meetings on cybersecurity topics and initiatives, and was provided with two recent examples of ongoing approaches to strengthening the Umoja cybersecurity posture: (a) the implementation of Onapsis, a third-party commercial application comprised of a suite of specialized components dedicated to SAP cybersecurity; and (b) the implementation of a "threat-hunting solution" for Umoja, which provided a means of proactively detecting cybersecurity threats that evaded existing security controls. The Committee was further informed, upon enquiry, that application security, which comprised the detection and mitigation of cybersecurity vulnerabilities, was the shared responsibility of the Enterprise Resource Planning Solution Division and the Office of Information and Communications Technology. **The Advisory Committee recalls the assessment and benchmarking exercise carried out by the Office of Information and Communications Technology and the Office of Programme Planning, Finance and Budget to identify requirements to protect the global Secretariat against the expanded cybersecurity risk map and to review the prevailing industry best practices (see A/77/519, paras. 57–64) and notes that the exercise had indicated that the ICT policy framework did not establish clear roles on cybersecurity across the federated ICT model (ibid., para. 61 (a)). The Committee trusts that further clarification and delineation of roles and responsibilities regarding Umoja related cybersecurity will also be included in the context of the revised ICT strategy.** The Committee makes further comments and observations in its report on the ICT strategy (see A/77/586).

24.   In terms of disaster recovery planning, the Secretary-General highlights that the Enterprise Resource Planning Solution Division and the Office of Information and Communications Technology have deployed a state-of-the-art high availability database replication solution, which will reduce recovery time, and that a table-top disaster recovery exercise is planned to be conducted by the end of 2022.

25.   In its report, the Board indicates that a review of the two information disaster recovery exercises conducted since the launch of Umoja Foundation in 2015 revealed an average disaster recovery time of approximately 17.5 hours, as compared with the 8-hour recovery time target. In addition, the Board reiterated the importance of the annual updating, testing and/or exercising of the disaster recovery plan, as well as the appropriate updating of the business continuity plan to ensure core service delivery in the event of a major disaster (A/77/135, paras. 167–175).

26.   Upon enquiry, the Advisory Committee was informed that Umoja encompassed 20 core products, of which two were cloud-based and hosted in the SAP NS2 data centre with enhanced data security and protections, and that the Enterprise Resource Planning Solution Division was continually monitoring the opportunities and risks related to moving to the cloud. The Committee was further informed, upon enquiry, that cloud-based enterprise resource planning systems had some advantages over conventional systems in technology management, operations and maintenance, and that Umoja could potentially make use of those advantages for cost savings, but that the related savings would be difficult to estimate. **The Advisory Committee is of the view that decisions on the adoption of cloud-based solutions for Umoja should be part of an overarching approach of the Organization regarding cloud services and be consistent with its strategy for information and communications technology.** The Committee makes further comments and observations in its report on the ICT strategy (A/77/586).

Governance model

27.   The Secretary-General provides an overview of the Umoja governance model (A/77/495, paras. 51–56), comprising the following main elements:

        (a)   **Management Committee and Information and Communications Technology Steering Committee**: The Enterprise Resource Planning Solution Division will continue to report on its overall strategic direction to the Management Committee, including through the ICT Steering Committee on technical issues;

        (b)   **Department of Management Strategy, Policy and Compliance and Department of Operational Support**: The Director of the Enterprise Resource Planning Solution Division will continue to solicit input from the Under-Secretary-General for Management Strategy, Policy and Compliance and the Under-Secretary-General for Operational Support on all important matters relating to the Umoja system and the Enterprise Resource Planning Solution Division;

        (c)   **Umoja Change Board**: The Umoja Change Board remains the primary governance mechanism for system enhancements and includes representatives from a broad range of Secretariat functional subgroups and Secretariat entities, including the Office of Information and Communications Technology, regional commissions and the Executive Office of the Secretary-General. The Board meets every two months, and upon the request of its membership, in order to review proposed changes based on business need.

28.   Noting that the Enterprise Resource Planning Solution Division reported to the Management Committee only once in 2021, the Board was of the view that regular reporting to the Committee was essential for maintaining strong Umoja governance leadership for business transformation (A/77/135, para. 30).

Benefits realization

29.   The Secretary-General provides an overview of the Benefits Working Group, comprised of the Umoja Change Board functional subgroups, which is responsible for tracking and realizing the expected benefits; the Enterprise Resource Planning Solution Division, charged with implementing the programme of continuous improvements; and the Business Transformation and Accountability Division as the coordinator of benefits realization (A/77/495, paras. 57–61). It is noted that, since the previous progress report of the Secretary-General (A/76/386), the Benefits Working Group met five times and identified 23 enhancements for benefits tracking. With regard to the benefits of Umoja Extension 1, the Group is of the view that Umoja Extension 1 benefits are an indistinguishable part of the Umoja system and that their tracking is not cost-effective or meaningful; in respect of Umoja Extension 2 benefits, the Group is set to begin its review in accordance with an updated time-bound plan to be finalized in December 2022. In parallel, it is indicated that the Benefits Working Group will continue tracking the benefits of continuous improvements to all phases of Umoja.

30.   The Board of Auditors is of the view that, considering the significant investment in the Umoja system, the overall benefits need to be measured, updated and reported to Member States, instead of being shown as estimated reductions in budget submissions (A/77/135, para. 180). The Board also expresses its concern regarding potential delays in the schedule of Umoja Extension 2 benefits realization and noted that 18 per cent of benefits identified by the Benefits Working Group had not been tracked as approved by the Umoja Change Board. The Board of Auditors stresses that Umoja represents a significant investment for the Organization and, as such, requires robust planning and monitoring mechanisms to measure the achievement of expected benefits. The Board accordingly recommends that the Administration update the time-

bound plan for the review of Umoja Extension 2 benefits and put in place a monthly process for the tracking of benefits of all change requests approved by the Umoja Change Board (ibid., paras. 181–187). **The Advisory Committee concurs with the Board and recommends that the General Assembly request the Secretary-General to ensure that benefits from all change requests approved by the Umoja Change Board be tracked and monitored and reported to the Assembly (see also para. 11 above).**

Risk management, training and production support

31.   The report of the Secretary-General outlines progress with regard to Umoja project risks, training and its production support model (A/77/495, paras. 62–68). At its final meeting, the Umoja Steering Committee endorsed the closure of the four outstanding Umoja project risks; notable risks are at present being reported to the Umoja Change Board and, in exceptional situations, to the Management Committee and/or the ICT Steering Committee. The functional subgroups, the Enterprise Resource Planning Solution Division and the Office of Information and Communications Technology have the responsibility to address Umoja system risks within the Secretariat risk management framework, with risks being captured within the enterprise risk management solution (ibid., para. 62). Upon enquiry, the Advisory Committee was informed that the main risk for the Umoja solution was the timely upgrade to enhancement package 8 (see para. 39 below).

32.   In terms of training, the report highlights the role of the Capacity Development and Operational Training Service and its partnership with the functional subgroups and the Enterprise Resource Planning Solution Division to develop online training solutions, including a human resources certification programme, an integrated planning, management and reporting training module and a new programme for Umoja Analytics. In addition, the Service developed a single point access learning hub for Umoja training, which includes the development of an online course catalogue. Training improvements in development include a comprehensive training needs assessment by the end of 2022, a performance gap analysis for the supply chain functional subgroups and the launch of a new introductory course, "Umoja – working smarter", to replace legacy courses (A/77/495, paras. 64–65).

33.   The Secretary-General indicates that Umoja production support is a four-tiered system with shared responsibility between the Office of Information and Communications Technology, the functional subgroups and the Enterprise Resource Planning Solution Division. As such, tier 1 and tier 2a desk support is provided by the Office, tier 2b process expert support is provided by functional subgroup process experts and tier 3 techno-functional support and overall support coordination is provided by the Division. The Secretary-General notes that, as at 15 September 2022, the Umoja ticket backlog had been reduced by 17.1 per cent, and the average age of tickets by 61.8 per cent, since reporting to the Board of Auditors for its report (ibid., paras. 66–67).

34.   In its report, the Board notes the roll-out in October 2021 of the Umoja risk management module entitled "Fortuna" and expresses its concern that key risk management-related posts have been long vacant (A/77/135, paras. 56–63). The Board also notes the need to conduct a comprehensive impact analysis of the long-term backlog of tickets and to update related standard operating procedures, which lack key elements relating to the mainstreaming of Umoja (ibid., paras. 150–154). In relation to training, the Board notes that Umoja training courses were hosted on various platforms and that the Umoja Learning Hub lacked a detailed implementation plan (ibid., paras. 156–165).

Total cost of ownership

35.   The Secretary-General, in paragraph 69 and table 1 of his report, indicates that the updated total cost of ownership has fallen from $1,526.4 million in the previous progress report to $1,519.9 million. Upon enquiry, the Advisory Committee was informed that the decrease of $6.5 million was primarily due to an underexpenditure related to the maintenance costs of the system, as detailed in table 2 below:

Table 2
Difference in total cost of ownership between 2021 and 2022
(Thousands of United States dollars)

	As presented in 2021	*As presented in 2022*	*Difference*
Direct and business support costs	832 324.1	829 571.6	(2 752.5)
Training costs	114 929.1	116 984.9	2 055.8
Maintenance costs	359 350.6	353 516.3	(5 834.1)
Total difference			**(6 530.8)**

36.   **The Advisory Committee trusts that further clarification on the updated total cost of ownership will be provided to the General Assembly at the time of consideration of the present report.**

37.   The Board of Auditors notes that the original cost of Umoja was estimated at $248.3 million in 2008 but did not include maintenance and support costs. The total cost of ownership was first calculated in 2017 and total lifetime costs of the solution, including direct, indirect, training, maintenance and business support costs, were estimated at $1,402.2 million up to 2030. Since then, the total cost of ownership has continued to rise and stood at $1,526.4 million in 2021 (ibid., para. 189 and figure IV). The Board further indicates that, with the closure of the Umoja project, indirect costs would remain fixed at 15 per cent of direct costs and that the increase of 36 per cent in direct costs in 2021 was due to the inclusion of costs for the Enterprise Resource Planning Solution Division (ibid., paras. 190 and 195–197). The Board also notes that technology upgrade costs, such as the upgrade to S/4 HANA and enhancement package 8, had not been factored into the total cost of ownership and recommends that an update to the estimation of the total ownership cost be carried out in view of the costs of technology upgrades (ibid., paras. 202–206).

38.   Upon enquiry, the Board of Auditors informed the Advisory Committee that maintenance costs included costs related to connectivity, contractual services, hosting and related services, and licensing and maintenance, and that the Administration might seek to reduce such costs by means of cost-effective technology upgrades, such as through the automation of maintenance in the adoption of new technology. The Board further informed the Committee, upon enquiry, that its previous recommendations regarding maintenance costs (see ibid., annex, Nos. 24 and 59) had been overtaken by events due to the exclusion of the costs of technology upgrades, such as enhancement package 8, in the estimation of the total cost of ownership and in view of the new recommendation of the Board to consider the cost impact of such upgrades in the total ownership cost of the Umoja system (ibid., summary and para. 206). **The Advisory Committee trusts that the Secretary-General will ensure, in line with the recommendation of the Board of Auditors, a more accurate calculation of the total cost of ownership of the Umoja system going forward. The Committee also trusts that efforts will be made to contain, as much as possible, maintenance and upgrade costs.**

39. The Secretary-General indicates in his report that the Umoja Steering Committee has approved the upgrade of Umoja to SAP ERP 6.0 enhancement package 8, which will ensure continued vendor support, bring the system into line with technological advancements and further improve the user experience (A/77/495, para. 50). The Administration informed the Committee, upon enquiry, that the costs of the enhancement package 8 upgrade were envisaged to be covered from within existing resources and that, should any requirements for additional resources arise, the related proposals would be submitted in the context of the budgetary process, with the total cost of ownership accordingly updated. **The Advisory Committee considers that the costs of major technology upgrades must be incorporated in the long-term planning for the functioning and development of the Umoja system (see para. 11 above) and be provided for the review and consideration of the General Assembly. The Committee accordingly recommends that the Assembly request the Secretary-General to report on future planned upgrades to the Umoja system and their financial implications in a timely manner.**

B. Closure of the Umoja project

40. The Secretary-General indicates in his report that the Umoja project was mainstreamed into the Secretariat, as endorsed at the final meeting of the Umoja Steering Committee and in the subsequent meeting of the Management Committee (A/77/495, para. 75). It is also noted that all Umoja Extension 2 functionalities were deployed by the end of 2020, allowing for closure of the project on 31 December 2020 and for a hypercare and stabilization period up to 31 December 2021.

41. In its report, the Board indicates that mainstreaming aims at strengthening in-house capacity and expertise in the Umoja system and targeting knowledge transfer from consultants to staff through a detailed action plan. Upon review of the mainstreaming plan, the Board noted that some roles and responsibilities of mainstreaming had not been clearly defined and recommended a corresponding update of the plan (A/77/135, paras. 65–70).

42. The Advisory Committee was informed, upon enquiry, that the Enterprise Resource Planning Solution Division was self-sufficient in the design, maintenance and building of the Umoja system and that the reprofiling of its staff resources had begun in the project phase in 2016, so as to ensure the right mix of skills and grade structure for the post-project phase. The extensive reorganization of functions, knowledge transfer from contractual personnel to staff and individually tailored SAP training curricula for staff ensured the self-sufficiency of the Division to operate and develop the Umoja system without the need for a systems integrator, while the hiring of contractor services with specialized expertise was targeted at highly specialized activities and deliverables, some of which were not needed on a long-term basis and for which the risks were minimal and could be curtailed. **The Advisory Committee encourages the Secretary-General to continue his efforts towards enhancing the self-reliance of the Enterprise Resource Planning Solution Division in supporting the functioning and development of the Umoja system and trusts that additional information on the use of contractual personnel will be provided to the General Assembly at the time of its consideration of the present report and in the next report.**

43. With regard to a final assessment on the implementation of the Umoja project, the Board notes that some intra- and inter-solution linkages under Umoja Extension 2 have not been established and will be addressed as part of continuous improvements (ibid., paras. 100–102 and 212). The Board furthermore concluded that the Administration had not conducted a post-implementation review of the Umoja project, which was essential in identifying lessons learned as a result of its

implementation, and therefore recommended that the Administration undertake such a critical review to assess the achievements of the project (ibid., paras. 23–25).

44. **The Advisory Committee concurs with the Board of Auditors on the importance of a review to assess the achievements of the Umoja project. The Committee reiterates its view that the Secretary-General should provide a clear record of achievements and outstanding activities (see A/76/7/Add.20, para. 7) and recommends that the General Assembly request the Secretary-General to carry out a post-implementation review of Umoja as soon as possible and to submit the related findings in the context of his next progress report.**

45. Upon enquiry, the Advisory Committee was informed that the Secretary-General planned to submit the present progress report annually, in response to the recommendation of the Committee and the related resolution of the General Assembly (see A/76/7/Add.20, para. 7, and Assembly resolution 76/246). **The Advisory Committee recommends that the General Assembly requests the Secretary-General to present, in the context of the next progress report, a proposal on the future reporting on the Umoja system that takes into consideration the current phase of implementation of the system and the need for continued transparency on the system enhancements, benefits and costs, as well as its relation to and consistency with the revised ICT strategy.** The Committee makes further comments and observations in its report on the ICT strategy (A/77/586).

C. Proposed financing model for the Enterprise Resource Planning Solution Division, related maintenance costs of the Office of Information and Communications Technology and business support resources

46. Paragraphs 76 and 77 and table 3 of the report of the Secretary-General outline the proposed revised financing model for the Enterprise Resource Planning Solution Division, the maintenance costs of the Office of Information and Communications Technology and business support services. From 2024 onward, the Secretary-General proposes to implement a cost-sharing arrangement, to be updated every five years, with the following apportionment: 25 per cent regular budget, 60 per cent support account for peacekeeping operations and 15 per cent voluntary contributions. It is indicated in the report that the proposal is based on averages of trends from 2016 to 2021 for both the regular and the peacekeeping budgets, as well as on actual receipts of voluntary funding. The Advisory Committee notes that, as compared with the current ratios of 15, 62 and 23 per cent, respectively, the proposed cost-sharing arrangement would increase the regular budget share of the Enterprise Resource Planning Solution Division funding by 10 per cent, while reducing the total support account and extrabudgetary funding by the same percentage. The Committee further notes that the shares proposed in the previous report were as follows: 26 per cent regular budget, 54 per cent support account and 20 per cent voluntary contributions. In addition, as in the previously proposed financing model (see A/76/386, paras. 143–144 and table 8), the current report also includes the proposal to appropriate up front the extrabudgetary share of funding through the regular budget, with a similar amount reflected under income section 2 of the programme budget (A/77/495, para. 77).

47. **The Advisory Committee notes that no additional justifications or calculations have been provided in the present report in support of the proposed revised financing model. The Committee therefore remains unconvinced that the inclusion of the extrabudgetary share of funding as cost recovery income is merited and reiterates its previous recommendation that the General Assembly request the Secretary-General to review alternative options for the revised cost-**

sharing arrangement, to further refine his approach to cost-sharing the totality of resources supporting the Umoja system and to present the related proposal and justifications, supported by the appropriate calculations, for the consideration of the Assembly in the context of his next progress report (see A/76/7/Add.20, para. 70).

IV. Conclusions and recommendations

48.   The actions requested of the General Assembly are set out in paragraph 78 of the progress report of the Secretary-General. **Subject to its observations and recommendations above, the Advisory Committee recommends that the General Assembly take note of the report of the Secretary-General.**

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